USUHS GRADUATE SCHOOL OF NURSING

Clinical Pharmacology for Advanced Practice Nurses

CLINICAL CORRELATION ASSIGNMENT

Case Study

Major Depressive Disorder

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3-7-2000

After this presentation on Major Depressive Disorder, students should be able to:

- Identify the target symptoms of depression
- Develop a comprehensive pharmaceutical care plan for a patient with major depression
- Compare the adverse effect profiles of tricyclic antidepressants and selective serotonin reuptake inhibitors
- Utilize standard rating scales for assessing depression

Depression Identification

According to the Diagnostic and Statistical Manual of Mental Disorders page 327, the criteria for a first episode of a Major Depressive condition of moderate intensity (296.22) are:

A. Five (or more) of the following symptoms have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure.

Note: Do not include symptoms that are clearly due to aa general medical condition, or mood-incongruent delusions or hallucinations.

(1) depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful). **Note**: In children and adolescents, can be irritable mood.

(2) markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation made by others)

(3) significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day. Note: In children, consider failure to make expected weight gains.

(4) insomnia or hypersomnia nearly every day

(5) psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down)

(6) fatigue or loss of energy nearly every day

(7) feelings of worthlessness or excessive or inappropriate guilt (which may delusional) nearly every day (not merely self-reproach or guilt about being sick

(8) diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others)

(9) recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide

B. The symptoms do not meet criteria for a Mixed Episode (see p. 335).

C. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

D. The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hypothyroidism).

E. The symptoms are not better accounted for by Bereavement, i.e., after the loss of a loved one, the symptoms persist for longer than 2 months or are characterized by marked functional impairment, morbid preoccupation with worthlessness, suicidal ideation, psychotic symptoms, or psychomotor retardation.

Depression Assessment

Pages 104-128 of Physical Examination and Health Assessment by Jarves has the information required for NP's to incorporate a Mental Status Examination into their assessment of a patient.

Mental Status examination documents a dysfunction and determines how that dysfunction affects self-care in everyday life. Using the acronym A, B, C, T to stand for appearance, behavior, cognition, and thought process. This examination systematically checks a person's emotional and cognitive functioning.

Appearance	Posture Body movements Dress Grooming and hygiene
Behavior	Level of consciousness Facial expression Speech Mood and affect
Cognitive Functions	Orientation – time, place, person Attention span Recent memory Remote memory New learning – 4 unrelated words with 5 minute recall

Higher Intellectual Functions – proverb, digit span

Judgment	What would you do if you found an envelope addressed and with a stamp on it

Thought Process and Perceptions

Thought process – Make sense, logical coherent, relevant, can they complete a thought?

Thought content – Consistent, logical

Perceptions – How do people treat you?
Do you feel like you are being watched or controlled?
Is your imagination very active?
Have you heard your name when alone?

Suicidal Ideation	Have you ever felt so blue that you thought of hurting yourself? Do you feel that way now? Do you have a plan? What would happen if you were dead?

How would other people react if you were dead?

Also, a Beck depression scale has been faxed. This is considered the psychiatric “Gold Standard” depression test. This test is to be administered by specially trained staff and results interpreted by psychologists.

The patient presents as follows:

Chief Complaint
"I'm having difficulty concentration in school and I just don't have any energy lately."

HPI
Rhetta Brown is a 25 yo woman who presents to her family practitioner for her annual physical exam and Pap smear. She relates 14-lb. weight loss in the last 2 months. She also complains of not having any energy, but she has trouble falling asleep. She works part-time as a director of youth at a church while working on a master's degree in Art at a local university. She complains of the stress generated from her demanding job and going to school at the same time. She has had difficulty concentrating over the past 4 weeks and has not turned in a school project that was due last week. Being a talented artist, some of her art work has been exhibited at a statewide festival and exhibits. At the present time, however, she expresses a lack of interest in painting and is actually thinking about dropping out of graduate school.

PMH
S/P tonsillectomy at 8 years of age

FH
Youngest of 4 siblings; alcoholic parents, mother died of cirrhosis when the patient was 8. She was placed in a foster home during the fourth grade. An older sister is receiving sertraline for depression.

SH
Single, heterosexual female; vegetarian, does not drink alcohol or smoke; negative for drug abuse

Meds
Lo-Ovral 28, 1po QD

All
NKDA

ROS
Negative

PE

Gen
The patient is a thin woman in NAD

VS
BP 116/78, P 64, RR 16, T37.1°C

HEENT
PERRLA, EOMI, fundi benign, TMs intact

Neck
Supple and without obvious lymph nodes

Lungs/Thorax
CTA

Breasts
Normal and without masses

CV
RRR; normal S_1, S_2; no murmurs, rubs or gallops

Abd
Soft with no organomegaly

Genit/Rect
Pelvic exam is normal

Neuro
CN II-XII intact; sensory and motor levels normal

Mental Status Exam
The patient is appropriately dressed with clean clothes. She cries at times during the interview; affect is sad. Mood is depressed and she admits having suicidal ideation but not specific plan. She is oriented times three (to person, place, and time) but shows some recent memory deficits. Intelligency estimated to be above average. Concentration and abstactions (eg, "Don't cry over spilled milk" or "Rolling stones gather no moss") are satisfactory. She denies hearing voices or other hallucinations. She has good insight and judgment.

Labs
Sodium 141mEq/L, potassium 4.2 mEq/L, chloride 103mEq/L, CO_2 content 26 mEq/L, BUN 14 mg/dL, serum creatinine 0.9 mg/d:, glucose 97 mg/dL, uric acid 6.3 mg/dL, calcium 9.6 mg/dL, phosphorus 3.7 mg/dL
Hemoglobin 11.3 g/dL, hematocrit 36.1%, platelets 261,000/mm^3
Total bilirubin 0.7 mh/dL, AST 36 IU/L, ALT 45 IU/L, alkaline phosphatase 58 IU/L, GGT 15 IU/L, total protein 7.6 g/dL, albumin 4.8 g/dL, cholesterol 221 mg/dL, TSH 2.0 μIU/mL, T_4 6.3 mcg/dL

Assessment
Major depressive disorder, single episode

Plan
Initiate psychotherapy and antidepressant treatment

Question A

Our client has the following indicators of depression:

- 14# weight loss in the last two months
- low energy
- trouble falling asleep
- increased stress
- decreased concentration (last 4 weeks)
- lack of interest in usual pleasure giving activities
- procrastination
- crying depressed mood
- sad affect
- +suicidal ideation, no plan
- -for psychotic features
- meets 7 of 9 criteria for depression

Question B

1. Does this patient currently take any medication that may worsen her depression?

The answer is yes. Both the manufacturer of Lo Ovral 28, 1po QD and our Wells et al Pharmacotherapy Handbook indicate that depression may be a side effect of birth control pills.

Our case study does not mention how long our subject has been on this medication or shy she was initially placed on them. It may obviously be for contraception or perhaps it was for regulation or such purpose.

This will be an important factor in choice of modalities.

Also, according to the DSM-IV, if the birth control pills caused the depression, it may be considered a Substance-Induced Mood Disorder (e.g., a drug of abuse, a medication or a toxin).

Desired outcome

B.2. What are the goals of therapy for this patient?

a. Keep the patient safe

see patient 1x wk for 4 wks
Examine possibility of hospitalization
Evaluate support system
Contract for safety, monitor for suicide risk
Labs for blood levels of meds
Continued drug screening

b. Decrease/eliminate elements of depression

- Start medication – antidepressant
- Start low – go slow
- Samples rather than large script
- Consider reason for taking B/C pills and examine possibility of discontinue or switching to another method
- "Talk" Therapy to work through issues and gain a support system
- Sister takes Sertraline. What works for one family member may work for another.
- Use alternate therapys

c. Educate related to depression, maintenance and prevention

d. Evaluate abnormal labs

At a later date — Review diet – vegetarian, fasting lipid panel

Therapeutic Alternatives

3.a. What non-drug therapies should be included in this patient's treatment plan?

Exercise raises the endorphins contributing to a feeling of well being. Any activity sustained for 20-25 minutes, 3x week is beneficial.

Stress management treatments are easy, plentiful, and easy to access. A variety of music, art, relaxation, meditation, prayer therapies could be explored.

Accupuncture has proven to be beneficial alternate therapy for depression (see article).

3.b. What pharmacological options are available for the treatment of depression?

There are many classifications of antidepressants for treating depressions, they are:

Tricyclic antidepressants such as amitriplyline (Elavil by Stuart). Initial dose is between 50-75 mg/d and the usual total daily dose between 100-300 mg. This particular medication is helpful in coping with chronic pain as well as depression. Because it is older, it is much less expensive than newer antidpressants. Most tricyclics have high anticholinergic effects, produce sedation at least initially. Patients must be alerted to side effect of seizures and conduction abnormalities. EKG's are done prior to administration. Tricyclic antidepressants may interact with birth control pills.

Monamine Oxidase Inhibitors (MAOI's) such as Phenelzine (Nardil) or Tranlycpromine (Parnate) are begun at 15 mg/d and increased to about 60 mg for Parnate and 90 mg for Nardil. Each works through a Norepenephrine and serotonin reuptake antagonism method. It has fewer anticholinergic, sedation, orthostatic hypotension, seizure problems or conduction problems. However, when taking an MAOI, patients must be cautioned about interactions with certain foods such as swiss cheese, red wine and chocolate.

Selective Serotonin Reuptake Inhibitors (SSRI) usually work through a serotonin reuptake antagonism method. It has fewer anticholinergic, sedation, orthostatic hypotension or conduction problems. However, it may lower a seizure threshold or have the effect of decreasing sexual response. One example would be Sertraline (Zoloft). A patient could start 12.5 – 25 mg qd and build up to 25-200 as required. This medication has few side effects tha can not be managed by starting slow and going slowly.

Triazlopyredines such as Trazodone (Dysyrl) and Mefazodone (Serzone) may cause anticholenergic and gastrointestinal problems. Sedation and orthostatic hypotension may limit the amount that can be given.

Serotonin and Norepinephrine Reuptake Inhibitors such as Venlafaxine (Effexor) have been noted to cause a dose-related elevation of the diastolic blood pressure. If this side effect cannot be managed, another category of medication can be used. This medication combines the best of two categories with fewer other side effects as well and seems to work in about ½ the time as other categories. This may make it desirable when suicide ideation is present and when a more rapid response would seem beneficial.

There are many more options and I refer you to your pharmacy text and handbook if you have questions that were not covered.

Optimal Plan

4. Develop a pharmaceutical care plan for this patient.

For the sake of our presentation, I will determine that our patient has been on the same birth control pill for 1-1/2 years without any problem, wants to stay on the same medication and is willing to use alternate therapies as well as an antidepressant. This patient has a history of depression in her family; her sister is currently being treated with Sertraline. Often persons in one family respond well to the same medication. In the Milwaukee VA, Sertraline is required as a first line choice because of the low number of side effects as well as the low cost. I would prefer in this instance to use Effexor becuae of a rapid response. In the Milwaukee VA, Sertraline is required as a first line medication, therefore, we will prescribe it.

In many cases of depression and Pre Menstrual Syndrome (PMS) B_6, 20-25mg QD is given to promote well being and nutrition for the nervous system.

Order
B_6, 20-25 mg QD
Sertraline 50 mg Qam

Increase Sertraline to 50 mg Qam and Qpm after one week
Evaluate at each visit and increase as necessary
Teach about side effect of each medication.

Assessment Parameters

5. How should the patient's therapy be monitored?

a. Give samples or script for small amounts of medication (two weeks supply at most)

b. have patient visit every week at least during the first month of therapy for support, clarification, and evaluation.

Draw blood once a week, 6-8 hours after administration of medication. Half life is 21 hours. This medication is a high protein binder. Medication is 36% bioavailable and increases to 40% when taken with food. N-desmethylsertraline.

c. Call each week after visit prior to or just after weekend.

d. Suggest that if a high dose of Sertraline is required or other birth control pill problems arise and possibly prior to tapering off Sertraline a switch to Tri-Norinyl tab, 28 may be made. This birth control pill has a higher estrodial level and a newer progesten with a slightly different chemical makeup that may be less likely to cause problems related to depression.

e. Renew "not to harm" contract each visit and each weekly followup phone call.

f. Suggest patient share news of depression with close family member and a person she considers significant, i.e., pastor or youth minister.

g. Continue to do urinalysis for drug screening.

Patient Counseling

6. How should the patient be counseled about her drug therapy?

To counsel a patient we need to be clear about our expectations:

1 tablet every AM for 1 week
1 table every AM and every bedtime for 1 week

Plant positive thoughts about the efficacy of the medication.

Explain need for blood levels and compliance and what to do if medication is forgotten.

Identify possible side-effects and how to avoid them, i.e., take with food, Tylenol for headache.

Reason for selecting an SSRI, i.e., low side effects. Explain that some TCA's do interact with birth control pills.

Walking is the best exercise but any exercise will augment medcations.

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